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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,374	07/22/2003	David C. Baese	N9554	7669

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WADDEY & PATTERSON  
Bank of America Plaza  
414 Union Street, Suite 2020  
Nashville, TN 37219

EXAMINER

LU, JIPING

ART UNIT PAPER NUMBER

3749

DATE MAILED: 08/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/624,374

Applicant(s)

BAESE ET AL.

Examiner

Jiping Lu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 27, 28 and 30-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 27, 28, 30-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102/103*

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 27-28 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ueki et al. (JP 02302556 A).

Ueki et al. shows a water heater apparatus comprising a burner 6; a primary heat exchanger 5 having an exterior surface exposed to the burner for receiving heat from the burner, and having an inner flow path for flowing water through the heat exchanger, the flow path having a water inlet and a water outlet (not numbered, see Fig. 1); a water supply conduit 1 connected to the water inlet; a water discharge conduit 18 connected to the water outlet; a recirculation conduit (not numbered, see Fig. 1) communicating the water outlet with the water inlet and bypassing the heat exchanger for directing recirculated water from the water outlet to the water inlet so that the recirculated water recirculates through the heat exchanger without having passed through any portion of the water discharge conduit 18 downstream of the recirculation conduit; a recirculation valve 21 disposed in the recirculation conduit; a water temperature sensor 3, 15 disposed in one of the inner flow path and the recirculation conduit; and a controller 12, operably associated with the temperature sensor 3, 15 and the recirculation valve 21, for varying a position of the recirculation valve in response to the water temperature sensor. As for the limitations, “while the water supply conduit and water discharge conduit are open and water is flowing in through said water supply conduit and out through said water discharge

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conduit, so that the recirculated water recirculates through the heat exchanger without having passed through any portion of the water discharge conduit downstream of the recirculation conduit” in lines 10-14 of claim 27, they are viewed as functional or intended use limitations. As MPEP 2114 states, “[a] claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim”. In this case, the limitations above do not add any structural limitations to the claim and Ueki et al. discloses all the structural limitations. The water heater of Ueki et al is capable of perform the above claimed function or intended use while valves 13, 21 17 are open. With regard to the claimed limitation in last four lines of claim 27, the controller 12 of Ueki et al. is capable of maintaining the water temperature at the water inlet to the inner flow path of the heat exchanger at or above a selected temperature sufficient to prevent condensation of combustion products from the burner on the exterior surface of the heat exchanger. Or in the alternative, it would have been an obvious matter of design choice to select the water temperature at any desired temperature in order to obtain the optimum result since applicant has not disclosed that the claimed temperature solves any stated problem in a new or unexpected way or is for any particular purpose which is unobvious to one of ordinary skill in the art and it appears that the claimed feature does not distinguish the invention over similar features in the prior art.

3. Claims 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueki et al. (JP 02302556 A) in view of McIlroy et al. (U. S. pat. 5,820,830)

The water heater of Ueki et al. as above includes all that is recited in claims 31-33 except for a secondary condensing heat exchanger with corrosion coating and a combustion conduit for

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using the combustion products to preheat the incoming water. McIlroy et al. teach a water heater apparatus having a secondary condensing heat exchanger 84 with corrosion-resistant coating (see claim 2) and a combustion conduit 80 for supplying exhaust flue gas to the secondary condensing heat exchanger 84 in order to preheat the incoming water 106 same as claimed. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the water heater apparatus of Ueki et al. to include a secondary condensing heater exchanger with corrosion-resistant coating and a combustion conduit as taught by McIlroy et al. in order to use exhaust flue gas to preheat the incoming water and therefore save the energy.

4. Claims 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueki et al. (JP 02302556 A) in view of Suhr et al. (U. S. Pat. 5,293,841)

The water heater of Ueki et al. as above includes all that is recited in claims 31-33 except for a secondary condensing heat exchanger with corrosion coating and a combustion conduit for using the combustion products to preheat the incoming water. Suhr et al. teach a water heater apparatus having a secondary condensing heat exchanger 14 and a combustion conduit 13 for supplying exhaust flue gas to the secondary condensing heat exchanger 14 in order to preheat the incoming water KSW same as claimed. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the water heater apparatus of Ueki et al. to include a secondary condensing heater exchanger and a combustion conduit as taught by Suhr et al. in order to use exhaust flue gas to preheat the incoming water and therefore save the energy.

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5. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueki et al. (JP 02302556 A) in view of Suhr et al. (U. S. Pat. 5,293,841) as applied to claim 32 above, and further in view of McIlroy et al. (U. S. Pat. 5,820,830)

The water heater apparatus of Ueki et al. as modified by Suhr et al. as above includes all that is recited in claim 33 except for the secondary condensing heat exchanger is coated with a corrosion resistant coating. McIlroy et al. teach a concept of providing coating on surfaces of the condensing heat exchanger for avoiding corrosion same as claimed. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the water heater apparatus of Ueki et al. to include a coating on the surfaces of the secondary condensing heat exchanger in order to avoid corrosion.

6. Claims 27-28 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kato (JP 60263048 A).

Kato shows a water heater apparatus comprising a burner 3; a primary heat exchanger 2 having an exterior surface exposed to the burner for receiving heat from the burner, and having an inner flow path for flowing water through the heat exchanger, the flow path having a water inlet and a water outlet (not numbered, see Figs. 1,3); a water supply conduit 5 connected to the water inlet; a water discharge conduit 16 connected to the water outlet; a recirculation conduit 10, 14 communicating the water outlet with the water inlet and bypassing the heat exchanger for directing recirculated water from the water outlet to the water inlet so that the recirculated water recirculates through the heat exchanger without having passed through any portion of the water discharge conduit 16 downstream of the recirculation conduit; a recirculation valve 36 disposed in the recirculation conduit; a water temperature sensor 9, 11 disposed in one of the inner flow

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path and the recirculation conduit; and a controller 18, operably associated with the temperature sensor 9, 11 and the recirculation valve 36 for varying a position of the recirculation valve in response to the water temperature sensor. As for the limitations, “while the water supply conduit and water discharge conduit are open and water is flowing in through said water supply conduit and out through said water discharge conduit, so that the recirculated water recirculates through the heat exchanger without having passed through any portion of the water discharge conduit downstream of the recirculation conduit” in lines 10-14 of claim 27, they are viewed as functional or intended use limitations. As MPEP 2114 states, “[a] claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim.”. In this case, the limitations above do not add any structural limitations to the claim and Kato discloses all the structural limitations. The water heater of Kato is capable of perform the above claimed function or intended use while water supply conduit 5 and water discharge conduit 16 and valves 136 are open. With regard to the claimed limitation in last four lines of claim 27, the controller 18 of Kato is capable of maintaining the water temperature at the water inlet to the inner flow path of the heat exchanger at or above a selected temperature sufficient to prevent condensation of combustion products from the burner on the exterior surface of the heat exchanger. Or in the alternative, it would have been an obvious matter of design choice to select the water temperature at any desired temperature in order to obtain the optimum result since applicant has not disclosed that the claimed temperature solves any stated problem in a new or unexpected way or is for any

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particular purpose which is unobvious to one of ordinary skill in the art and it appears that the claimed feature does not distinguish the invention over similar features in the prior art.

7. Claims 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (JP 60263048 A) in view of McIlroy et al. (U. S. pat. 5,820,830)

The water heater of Kato as above includes all that is recited in claims 31-33 except for a secondary condensing heat exchanger with corrosion coating and a combustion conduit for using the combustion products to preheat the incoming water. McIlroy et al. teach a water heater apparatus having a secondary condensing heat exchanger 84 with corrosion-resistant coating (see claim 2) and a combustion conduit 80 for supplying exhaust flue gas to the secondary condensing heat exchanger 84 in order to preheat the incoming water 106 same as claimed. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the water heater apparatus of Kato to include a secondary condensing heater exchanger with corrosion-resistant coating and a combustion conduit as taught by Kato in order to use exhaust flue gas to preheat the incoming water and therefore save the energy.

8. Claims 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (JP 60263048 A) in view of Suhr et al. (U. S. Pat. 5,293,841)

The water heater of Kato as above includes all that is recited in claims 31-33 except for a secondary condensing heat exchanger with corrosion coating and a combustion conduit for using the combustion products to preheat the incoming water. Suhr et al. teach a water heater apparatus having a secondary condensing heat exchanger 14 and a combustion conduit 13 for supplying exhaust flue gas to the secondary condensing heat exchanger 14 in order to preheat the incoming



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water KSW same as claimed. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the water heater apparatus of Kato to include a secondary condensing heater exchanger and a combustion conduit as taught by Suhr et al. in order to use exhaust flue gas to preheat the incoming water and therefore save the energy.

9. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (JP 60263048 A) in view of Suhr et al. (U. S. Pat. 5,293,841) as applied to claim 32 above, and further in view of McIlroy et al. (U. S. Pat. 5,820,830)

The water heater apparatus of Kato as modified by Suhr et al. as above includes all that is recited in claim 33 except for the secondary condensing heat exchanger is coated with a corrosion resistant coating. McIlroy et al. teach a concept of providing coating on surfaces of the condensing heat exchanger for avoiding corrosion same as claimed. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the water heater apparatus of Kato to include a coating on the surfaces of the secondary condensing heat exchanger in order to avoid corrosion.

### ***Response to Arguments***

10. Applicant's arguments filed 7/10/2006 have been fully considered but they are not persuasive. First the broad claims fail to structurally define over the prior art references. The applicant is requested to point out from the claims if any limitation that the prior art references do not teach or show. Second, the applicant argued that the prior art reference, Ueki et al (JP 02302556A) does not show a controller capable of "maintain the water temperature at the water inlet to the inner flow path of the heat exchanger at or above a selected temperature sufficient to

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prevent condensation of combustion products from the burner on the exterior surface of the heat exchanger". The examiner disagrees because the Ueki patent clearly shows an overall water heater apparatus similar to the claims. Therefore, the claimed functions can be inherently performed by the water heater apparatus with various temperature adjustments or burner controls. Third, with regard to 35 USC 103 rejection, it is also the examiner's position that controller 12 is capable to "maintain the water temperature at the water inlet to the inner flow path of the heat exchanger at or above a selected temperature sufficient to prevent condensation of combustion products from the burner on the exterior surface of the heat exchanger". It should be noted that it is well known in the art to maintain water temperature at certain level in order to prevent undesirable condensate formation in the combustion products. The accumulated condensate will cause corrosion.

### ***Conclusion***

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

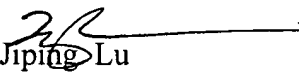
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jiping Lu whose telephone number is 571 272 4878. The examiner can normally be reached on Monday-Friday, 9:00 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, EHUD GARTENBERG can be reached on 571 272-4828. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Jiping Lu  
Primary Examiner  
Art Unit 3749

J. L.